METHOD AND SYSTEM FOR A BI-DIRECTIONAL PATH SWITCHED NETWORK

ABSTRACT OF THE DISCLOSURE

A system for use in a bi-directional path switched ring network for detecting a failed optical path and establishing a protection path so as to allow signals from the failed optical path to be re-routed via the protection path is provided. According to one aspect of the system, upon detecting a failure relating to an optical path, the destination node generates a connection request message for transmission to the source node. The connection request message is passed to the source node via one or more intermediate nodes, if any. Each intermediate node examines the connection request message and accordingly reserves the requisite wavelength from the protection capacity so as to allow signals from the failed optical path to be re-routed. Upon receiving the connection request message, the source node readies its switching equipment to re-route signals from the failed optical path and generates an acknowledgment message and propagates it back to the destination node via the intermediate nodes. The intermediate nodes and the destination node, upon receipt of the acknowledgment message, also ready their respective switching equipment to carry the re-routed signals via the previously reserved wavelength from the protection capacity. According to another aspect of the system, a contention resolution mechanism is provided to resolve contending connection request messages received at a node requesting the same wavelength to be reserved from the protection capacity for different failed optical paths. A message format is used for the connection request message which allows the connection request message to include information relating to the type of failure experienced by a failed optical path and other priority data. Such information is then used by a node to determine priority between two contending connection request messages.